

12. (Amended) A method of diagnostic imaging comprising:

moving a detector head in an orbit about a subject in an examination region in one of a (1) continuous rotate and
5 (2) step and shoot mode;

collecting data during the orbit and organizing the data in a plurality of projection data sets corresponding to each of a plurality of angular increments around a subject;

performing a resolution recovery process on the
10 projection data sets; and

reconstructing the resolution recovered projection data sets into an image representation.

17. (Amended) The method of claim 12 wherein projection data sets with collected projection data span less than 360°, the resolution recovery process function including:

zero-filling projection data sets in the angular
5 rotation direction, the zero-filled and actually collected projection data sets together spanning 360°; and

smoothing each interface between the actually collected and zero-filled data sets, the smoothed data sets being transformed into frequency space.

22. (Amended) A diagnostic imaging apparatus comprising:

a means for collecting a plurality of projection data sets corresponding to each of a plurality of angles around a
5 subject, the projection images being collected over less than 360°;

a means for performing a resolution recovery process on the projection data sets; and

a means for reconstructing the resolution recovered
10 projection data sets into an image representation.

Marked up copies of the amended claims showing the insertions in underlining and the deletions in brackets is attached in **APPENDIX 1**.